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STATISTICS OF THE WATER SUPPLY OF THE
PRINCIPAL CITIES AND TOWNS IN GREAT
BRITAIN AND IRELAND compiled from
Official Returns, by GEORGE Wm. USILL

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IN

GREAT BRITAIN AND IRELAND,

Compiled from Official Returns, by

GEORGE W^M. USILL,

Assoc. Mem. Inst. C.E.



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P R E F A C E .

BEING necessary that I should obtain the Statistics of the Water Supply of the principal Cities and Towns in Great Britain, for the purpose of assisting in an official investigation upon the Continent, I addressed the Engineers and Surveyors in charge of the various Works, and was gratified at their cordial response to my request. Feeling the extreme value of such particulars, I am induced to publish them, and in so doing I wish to take this opportunity of acknowledging the great courtesy I have experienced at the hands of my professional brethren.

G. W. U.

110, CANNON STREET,

March, 1881.

TOWN.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.	Number of People supplied.
Aberdare	Glamorganshire ...	Gravitation	34,000	Private Company and Local Board	1859 and 1874	£ 100,000	W. Williams and J. F. Bateman ...	T. L. Edwards	2 and 4 miles	Constant	32,000
Aberdeen	Aberdeenshire	Gravitation	100,000	Corporation	1866	170,000	James Simpson.....	Wm. Boulton ...	22 miles	Constant	100,000
Aberystwith	Cardiganshire	Gravitation	8,200	Corporation	Now in progress	16,000	Thomas S. Stooke	Rees Jones	16 miles	Intermittent	7,800
Abingdon	Berkshire	Gravitation	6,000	Corporation	Now in progress	9,000	Bailey, Denton & Co.	George Winship	2½ miles .....	.....	.....
Alnwick	Northumberland ...	Gravitation	6,200	Local Board	1852 and 1854	4,000	R. Rawlinson	Geoffrey Wilson	2½ and 3 miles	Both	6,000
Alton	Hampshire	Pumping ...	4,500	Local Board	1877	6,900	Gotto & Beasley	H. W. Elliott ...	¼ of mile.....	Constant	3,000
Andover	Hampshire	Pumping ...	4,508	Private Company	1876	4,000	Russ & Minns	A. Purkess	¼ of mile.....	Constant .....	.....
Ashford	Kent	Pumping ...	10,000	Private Company	1853	8,000	C. Bulmer	A. S. Robinson	Near boundry	Intermittent	.....
Ashton-under-Lyne	Lancashire	Gravitation	102,600	Joint Committee	1836, '70, and '80	243,000	N. Brown; Blackbourne & Emmett; Bateman & Hill	J. T. Earnshaw	2, 4, & 7 miles	Both	112,000*
Bacup	Lancashire	Gravitation	30,000	Private Company	1855	25,000	J. T. Mawson	John Wilson ...	1 mile	Constant	8,500
Bangor	Carnarvonshire ...	Gravitation	8,260	Private Company	1853 and 1854	.....	Edward Johnson ..	John Gill.....	6 miles ..	Intermittent	8,260
Barking	Essex	Pumping ...	10,000	Private Company	1870	.....	Minns & Co.	R. D. Wilding ..	14 miles	Constant	8,000
Barmouth	Merionethshire ...	Gravitation	1,800	Local Board	1874	2,800	Thomas Roberts	H. Jones	1¼ miles	Constant	4,000
Barrow-in-Furness	Lancashire	Gravitation	40,000	Corporation	1866 to 1878	118,384	F. C. Stileman	W. H. Fox	7 miles ...	Constant	40,000
Basingstoke	Hampshire	Pumping ...	6,000	Private Company	1870	4,000	Russ & Minns	Simon Westcott	In town ..	Intermittent	4,500
Bath	Somersetshire	Gravitation	54,000	Corporation	1846, '51, and '70	126,000	Manner & Gill; A. Mitchell	Alfred Mitchell	3½ and 7 miles	Intermittent	55,000
Bebington Lower ...	Cheshire	Pumping ...	3,768	Private Company	1865	.....	.....	M. P. Elsley ...	3 miles	Constant .....	.....
Beckenham	Kent	Pumping ...	11,550	Private Companies .....	.....	.....	J. Hawley; — Morris.....	E. Watkins	20 miles	Intermittent	11,550
Bedford	Bedfordshire	Pumping ..	18,500	Corporation	1868	19,700	Lawson & Mansergh	John Lund	1 mile	Constant	18,500
Belfast	Antrim and Down	Gravitation	225,000	Water Commissioners	1841 and 1880	418,000	Messrs. Bateman; Lanyon; McNeill; & MacCassey	J. J. Montgomery	11 miles	Constant	225,000
Berwick-on-Tweed .	Northumberland ...	Both.....	10,000	Urban Sanitary Authority	1854 and 1871	15,986	R. Rawlinson; J. & A. Leslie.....	James Lawrie...	2 and 3 miles	Constant	10,000
Bilston	Staffordshire	Pumping ...	25,000	Local Board	1850	.....	.....	L. Lloyd	2 miles	Intermittent	25,000
Birstal	Yorkshire.....	Gravitation	7,500	Local Board ..	1864	12,030	Stevenson & Atley; J. Lumley ..	.....	4½ miles	Constant	7,000
Bishop Stortford ...	Hertfordshire ...	Pumping ...	7,000	Private Company	1868	.....	Easton & Anderson	E. Dudley	½ mile	Constant	6,000
Blackburn	Lancashire	Both	105,000	Private Company	1844	.....	J. T. Bateman; Brierly & Holt ...	W. B. Bryan ...	4 miles	Constant	100,000
Blackpool	Lancashire	Gravitation	40,000*	Private Company	1861	177,814	J. B. Foster; E. Garlick .....	.....	3, 6 & 11 miles	Constant	40,000*
Bodmin	Cornwall	Pumping ...	4,672	Private Company	1866	9,000	S. W. Jenkins	W. J. Jenkins...	1½ miles	Intermittent	2,805
Boston	Lincolnshire	Gravitation	20,000	Private Company	1850	30,000	— Hawksley.....	W. H. Wheeler.	12 miles	Constant	16,500
Bradford	Yorkshire.....	Gravitation	191,000	Private Company and Corporation	1854	1,678,000	A. R. Binnie.....	J. H. Cox	11 & 18 miles	Constant .....	.....
Brecon	Brecknockshire ...	Gravitation	5,845	Corporation	1866	11,000	J. Davis.....	R. Davies	2½ miles	Constant	5,845
Bridgwater	Somersetshire	Pumping ...	14,000	Corporation	1879	40,000	T. & C. Hawksley	John Parker ...	6 miles	Constant	3,000
Burnley	Lancashire	Gravitation	87,800	Corporation	1819 to 1879	108,424	J. Emmett.....	J. Emmett	4 miles	Constant	64,320
Burton-on-Trent ...	Staffordshire	Pumping ...	24,000	South Staffordshire Water Co. ...	1861	*	McLean & Stileman, & W. Vawdrey	E. Clavey	11 miles	Constant .....	.....
Bury and District ...	Lancashire	Gravitation	130,000	Corporation	1853 to 1880	358,954	Thomas Hawksley	J. Cartwright ...	16 miles	Constant	100,000

Number of Houses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by measure or on Rental.	Whether covered Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Area of Impounding Reservoirs.	Maximum period of storage, in days.	REMARKS.
6,000	18.8	26	Rental	Open.....	47,000,000	7 acres.....	60	First portion of works constructed by private company; second portion by Local Board, who afterwards purchased the Company's undertaking. Water is taken from River Dee, and is so pure that it is not necessary to have large storage reservoirs. Near the intake there is a reservoir and filters with a capacity of 13,500,000 galls., and service reservoirs in the neighbourhood of the city with a capacity of 6,500,000 galls. The supply is taken from a lake.
7,000	23.21	26.30	Both ...	Open.....	20,000,000	4 acres.....	4	
1,500	15	17	Rental	Not finished.....	1,000,000	11 acres	225	
.....	21.2	23.2	Measure	Covered	125,000			The water supply being unsatisfactory it is contemplated to obtain a supply of 350 galls. per minute at an estimated cost of from £9,000 to £10,000. The Board are engaged in boring from the bottom of their well in chalk, the present supply being inadequate in dry seasons.
950 to 1,000	18	26.5	Both ...	Covered	210,000	None	1	
600	17	18	Rental	Covered	98,000	None	3	
.....	17.7	19	Both ...	Covered	120,000		3	*Includes 9,400 population, for districts within parish of Ashton. By special act, the Committee, composed of the Corporations of Ashton and Stalybridge, and Local Board of Dunkinfield, Hurst and Mossley. Drainage areas are 377 and 1,290 acres respectively.
.....	15	18	Rental	Covered	40,000	.....	Less than 1	
23,000	23.80	24.30	Both ...	Open	544,500,000	83½ acres.....	140 and 200	
1,889	17	22	Both ...	None.....	26,000,000	9 acres.....	120	Works purchased in 1878 by Local Board. The supply is taken direct from river. The water taken from chalk at Grays, Essex; supply very short.
95 per cent.	22.24	.....	Rental	.....	.....	.....	.....	
1,400	20	21	Rental	Open .....	.....	400 sq. ft. ....	.....	
400	10	18	Rental					These Works are entirely gravitation, with one small exception. The storage depends upon the rainfall. Supplied by the Wirral Water Company. Lambeth and West Kent Water Companies supply different portions of the district.
6,969	17	.....	Both ...	None.....	484,000,000	47 acres .....	.....	
720	12	15	Both ...	Covered	24,000	.....	2	
8,500	20	23	Both ...	Open	10,114,000	3¼ acres		8,500,000 gallons per day supplied to town; there are 10 reservoirs including a lake. There is also a fire rate on warehouses, &c. The supply is obtained at the present time nearly solely from springs. Water is pumped into our mains by the Wolverhampton Corporation. Supply is obtained from the Bradford Corporation. Works since purchased by Local Board. 51,000,000 gallons is for compensation; new works are at present in progress at a cost of £400,000. District "The Fylde," comprising towns of Blackpool, Lytham, Fleetwood, Kirkham, and a number of villages. *In summer an increase of 50,000. Supply is obtained from a spring. About 300,000 gallons of water used per day. Further works in progress. *Filter beds uncovered; each capable of containing 90,000 gallons.
.....	.....	20	Rental	Covered .....	.....	.....	.....	
2,300	14	18	Rental	Both.....	.....	.....	.....	
3,700	17.4	20	Rental	Covered	375,000			*Town had to pay its proportion to the South Staffordshire Waterworks Company of £719,000. The District includes the townships of Radcliffe, Little Lever, Haslingden, New Chuch, Rautenstall, Ramsbottom, and portion of Prestwick, and the works were principally carried out by private companies, and since purchased by the Corporation of Bury.
37,000	24	.....	Both ...	None.....	1,695,000	340 acres.....	180	
.....	24.00	27.95	Rental..	Covered	7,750,000	3½ acres .....	.....	
.....	22.7	28	Both ...	Open				51,000,000 gallons is for compensation; new works are at present in progress at a cost of £400,000. District "The Fylde," comprising towns of Blackpool, Lytham, Fleetwood, Kirkham, and a number of villages. *In summer an increase of 50,000. Supply is obtained from a spring. About 300,000 gallons of water used per day. Further works in progress. *Filter beds uncovered; each capable of containing 90,000 gallons.
1,530	25	25	Both ...	Covered	240,000	484 sq. yds...	2	
.....	18	21	Both ...	Covered	150,000	.....	.....	
19,500		25	Both ...	Both	505,500,000			*Town had to pay its proportion to the South Staffordshire Waterworks Company of £719,000. The District includes the townships of Radcliffe, Little Lever, Haslingden, New Chuch, Rautenstall, Ramsbottom, and portion of Prestwick, and the works were principally carried out by private companies, and since purchased by the Corporation of Bury.
7,187	.....	.....	Both ...	Open	260,000,000	.....	112	
561	18	20	Rental .	Open	239,286	None	80	
.....	20.6	21	Rental .	Open	75,455,798	37¾ acres.....	250	*Town had to pay its proportion to the South Staffordshire Waterworks Company of £719,000. The District includes the townships of Radcliffe, Little Lever, Haslingden, New Chuch, Rautenstall, Ramsbottom, and portion of Prestwick, and the works were principally carried out by private companies, and since purchased by the Corporation of Bury.
.....	.....	25	Both ...	Open	1,130,000,000	176 acres.....	140	
1,052	22.5	23.05	Rental .	*Open	*90,000	.....	.....	
620	16.3	19	Both ...	Covered	70,000	1,500 sq. yds.	3	*Town had to pay its proportion to the South Staffordshire Waterworks Company of £719,000. The District includes the townships of Radcliffe, Little Lever, Haslingden, New Chuch, Rautenstall, Ramsbottom, and portion of Prestwick, and the works were principally carried out by private companies, and since purchased by the Corporation of Bury.
12,250	.....	23	Rental .	Covered & open	204,000,000	.....	.....	
.....	.....	.....	Both ...	.....	.....	.....	.....	
25,000	22	25	Both ..	Open	645,312,500	154½ acres ...	100	

TOWN.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.	Number of People supplied.
Bury St. Edmunds..	Suffolk	Pumping ...	16,000	Corporation and Local Board	1864 and 1870	£	Messrs. Turner; M. Croft	Henry Siggers	In town	Constant	9,000
Buxton	Derbyshire	Gravitation	20,000	Local Board	1872 to 1880	23,000	Cawley, Newton and Smith	J. H. Taylor ..	1½ miles	Constant	20,000
Cambridge	Cambridgeshire ..	Pumping ..	45,000	Private Company	1855 and 1879	62,500	J. Simpson; H. Tomlinson.....	— Bowyer	3 miles.....	Constant	40,000
Cannock	Staffordshire	Gravitation	15,000	Private Company	1879	*	W. Vawdrey	John Peake	2 miles.....	Constant .....	.....
Cardiff	Glamorganshire ..	Both	100,000	Private Company	1850 and 1865	120,000	James Simpson.....	.....	4 miles.....	Constant	80,000
Carlisle	Cumberland	Pumping ...	35,000	Private Company	1848	42,000	James Simpson.....	.....	1 mile	Constant	35,000
Carmarthen	Carmarthenshire ...	Gravitation	10,500	Corporation	1838, '54, '72, '78, and '79	4,530	R. Evans; Brodie; A. S. Lukin and G. A. Hutchins	G. A. Hutchins	½, ¾ and 1 mile	Both	8,000
Caterham	Surrey	Pumping ...	5,000	Private Company	1860	10 to 15,000	Edward Easton.....	W. H. Snellgrove	8 miles	Constant .....	.....
Chelmsford	Essex	Pumping ...	9,000	Local Board	1854	7,000	James Fenton	Charles Pertwee	1,500 yards...	Intermittent	7,000
Chepstow	Monmouthshire ..	Gravitation	3,500	Private Company	1840 and 1878, 1879-80	8,000	R. Evans	R. Thorn.....	4½ miles	Constant	3,400
Chester	Cheshire	Pumping ...	59,569	Private Company.....	1826 and 1856	74,816	John Dugdale	I. M. Jones.....	1 mile	Both	42,000
Cleaton Moor.....	Cumberland	Gravitation	10,000	Local Board	1866	12,000	R. Pickering.....	.....	1 mile	Constant	13,000
Clitheroe	Lancashire	Gravitation	15,000	Private Company	1855	10,000	J. McLandsborough.....	H. Whitlow.....	5 miles ..	Constant	11,000
Cockermouth(urban)	Cumberland	Gravitation	6,000	Local Board	1863	12,000	John Lawson .....	.....	8 miles	Constant	6,500
Cockermouth(rural)	Cumberland	Both.....	14,000	Rural Sanitary Authority	1879	13,000	Pickering & Crompton .....	.....	18 miles	Constant	14,000
Congleton	Cheshire	Both.....	10,344	Corporation	1880	15,000	W. Blackshaw	W. Blackshaw...	In town and 3 miles.....	Cont ant.....	.....
Cork	Cork	Pumping ...	79,000	Corporation	1856	150,000	Sir J. Benson	James O'Toole..	¼ mile	Constant	100,000
Coventry	Warwickshire	Pumping ...	41,000	Corporation	1850	36,833	T. Hawksley	E. J. Pinnell ..	1 mile	Constant	38,000
Darlington.....	Durham	Pumping ...	34,000	Private Company and Corporation	1850	101,500	T. Hawksley.....	Thomas Smith	2 miles	Constant	34,000
Devizes	Wiltshire	Pumping ...	8,000	Corporation	1879	11,000	H. Tomlison .....	.....	5½ miles	Constant .....	.....
Dublin .....	.....	Gravitation	318,939	Corporation	1863	541,400	Parke Neville .....	.....	24½ miles ..	Constant	318,939
Dudley	Worcestershire ..	Pumping ...	46,650	South Staffordshire Water Co. ...	1862	*	W. Vaudrey	G. J. C. Broom	.....	Constant .....	.....
Dundee	Forfarshire	Gravitation	156,000	Private Company & Corporation...	1845, '53, '62, '66, '71 and '76	758,347	James Watson	Wm. Mackison	9, 11 & 20 miles	Constant	175,000
Dunfermline	Fifeshire	Gravitation	16,000	Private Company	1850 and 1880	70,000	J. & A. Leslie	Wm. Chrisholm	18 miles	Constant	18,000
Durham and District	Durham	Gravitation	150,000	Private Company	1866 to 1880	517,977	T. & C. Hawksley	W. de Normanville	2 and 19 miles	Constant	107,925
Eastbourne	Sussex	Pumping ...	20,000	Private Company	1859, and later on till now	80,000	G. A. Wallis, McLean & Stileman	Charles Tomes	1 mile	Constant	20,000
Enfield	Middlesex.....	Pumping ...	24,000	Local Board	1854 and 1871	10,000	J. Pilhow and N. Beardmore	W. Kitteringham	2 miles	Intermittent .	5,000
Epsom	Surrey	Pumping ...	8,000	Local Board	1854	.....	C. Saunders	J. R. Harding...	in town	Intermittent .	7,000
Erdington	Warwick	Suppl'd by B'hm .....	.....	.....	.....	.....	.....	B. H. Machin...	.....	.....	.....
Exeter	Devon	Pumping ...	40,000	Private Company	various	120,000	.....	H. P. Boulnois..	4 miles	Intermittent .	40,000
Falkirk	Stirling	Gravitation	14,000	Corporation .....	.....	.....	W. & A. Black	W. & A. Black...	1 mile	Constant	14,000
Falmouth	Cornwall	Gravitation	18,000	Private Company	1848 to 1877	.....	Easton & Anderson	W. H. Tresidder	3 miles	Intermittent in Summer and Constant in Winter.....	.....

Number of houses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by measure or on Rental.	Whether covered, Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Area of Impounding Reservoirs.	Maximum period of storage, in days.	REMARKS.
1,596	22.5	24	Rental	Open	100,000	None		Works about to be enlarged. Water is pumped from a well 90ft. deep into two covered tanks, one of wrought iron and the other of cast iron.
1,103	10.72	17.13	Both ...	None.....	22,566,000		150	The population fluctuates, in winter it is only 6,500.
8,000	23	23	Rental	Covered	1,000,000			*Town had to pay its proportion to the South Staffordshire Waterworks Company of £719,000. The works were purchased by the Corporation for £300,000. Works since purchased by Corporation.
.....	21.4	22.22	Rental	Uncovered .....	.....	.....	.....	
13,000	17.52	30	Both ..	Open.....	84,600,000	20 acres	100	
7,596	23.30	25.30	Rental	Open.....	2,250,000	.....	3	
1,300	20.38	26.2	Rental	Covered	11,700,000	4 acres	65	Pumped from a well in chalk to reservoir, 700ft. above sea level, then gravitates.
.....	14	18	Both ...	Open.....	.....	.....	.....	
.....	13.6	20	Rental	Covered	180,000	.....	.....	
600	16	19	Rental	Covered .....	.....	.....	.....	
.....	23.32	30	Both ...	Covered	596,000			Water is pumped from the river Dee into an open reservoir, thence passes to six filters, and from these to a covered pure water tank, and is afterwards pumped into a high service covered tank on tower, and then gravitates.
2,112	21	23	Rental	Open..	4,500,000	6,000 sq. yards	40	Supply from granite formation springs. Works since purchased by Corporation. Supply is obtained from a lake. This supply is drawn from a lake, thence Cockermouth (urban) and Workington also draw their supply.
2,030	20	.....	Rental	Open..	500,000	114 sq. feet..	1½	
1,300	21.50	22	Rental	Covered .....	.....	448 acres.....	60	
2,333	20.90	22	Rental	Covered	200,000	648 acres.....	60	
.....	21.8	24.9		Covered	332,000			The works are not in operation yet. We do not, as a rule, store water in reservoirs, as we pump all the year round.
.....	.....	.....	Both	Open.....	3,500,000	.....	.....	
8,000	21.70	27	Rental	Open	3,000,000	.....	3	
.....	19	28	Both	None	10,000,000			Works since purchased by Corporation.
386	18	21.8	Rental	Covered	180,000	2,500 feet ...	4½	
25,042			Both	Open.....	2,482,918,350	409 acres.....	200	* Town had to pay its proportion to the South Stafford Waterworks Company of £719,000. Works purchased by Corporation.
.....	17.3	25	.....	.....	.....	.....	.....	
.....	21.23	27.40	Both	Both	2,342,000,000	612 acres ..	400	
.....	21.5		Both	Covered	175,000,000	1,400 acres ..	260	Works purchased by Corporation, in 1864, who are at present carrying out extensions.
21,585	.....	.....	Rental	Open	989,000,000	132 acres ...	240	
3,000	11 to 13	15	Rental	Open	5,000,000		7	Large additions made to works annually.
1,000	17	20	Rental	Covered	500,000	.....	3	
1,100	15	.....	Both ...	Covered	200,000	.....	1 day	
6,000	21		Both ...	None.....	6,000,000	10,000 sq. yds.		The water is derived from old mineral workings, the capacity of which cannot be ascertained.
.....	25	.....	Rental	Covered ..	.....	.....	.....	
.....	.....	.....	Rental	Open.....	.....	.....	.....	
.....								The charge is 5 per cent. up to £25, and 2½ per cent. above.

TOWN.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.	Number of People supplied.
Fareham.....	Hants	Pumping ...	abt. 8,000	Local Board	1860	£ abt. £5,500	E. Rutledge; T. Buckham	John Rosevear ..	about $\frac{3}{4}$ mile ..	Constant from 6a.m. to 10p.m.	About 5,600
Farnham	Surrey	Gravitation	4,000	Private Company	1836	4,344	.....	Sidney Stapley..	2 miles	Partly Constant	4,000
Faversham.....	Kent.....	Pumping ...	10,000	Private Company	1864	10,000	R. Darney.....	Thomas Wear...	1 mile	Constant	7,500
Filey	Yorkshire.....	Gravitation	2,250	Private Company	1855	12,000	— Firkbanks	F. Pickering ...	4 miles	Constant .....	.....
Flint	Flintshire.....	Gravitation	4,004	Company	1852 and 1876	5,900	W. Richardson.....	Thomas Gleave, (Secretary Flint Gas and Water Company.)	1 and 2 miles.	Constant	3,000
Folkestone	Kent.....	Both.....	17,000	Private Company .....	.....	.....	.....	S. W. Conquest..	2 miles	Intermittent .	17,000
Frome.....	Somerset	Pumping ...	11,000	Local Board	1879 and 1880	13,500	Henry Tomlinson.....	William R. Stow	About $\frac{3}{4}$ mile	Constant	1,200
Gildersome.....	Yorkshire.....	Gravitation	About 4,000	Local Board	1871	2,000	Sheard & Austock	John Malthouse	About 8 miles	Constant	3,250
Glasgow	Lanarkshire	Gravitation	750,000	Corporation	1860	1,500,000	J. F. Bateman .....	.....	34 miles	Constant	750,000
Glastonbury	Somersetshire	Gravitation	3,804	Corporation	1873	1,500	Joseph Day	Joseph Day.....	3 furlongs ...	Constant	3,000
Glossop	Derbyshire	Gravitation	20,000	Corporation	1854 and 1865	21,000	Blackburne, Page & Wood.....	James Nuttall...	1 $\frac{1}{2}$ mile	Constant	10,000
Gloucester	Gloucestershire ..	Gravitation	38,000	Corporation	1855	61,000	J. F. Bateman	R. Read	5 miles	Constant	About 26,000
Godstone	Surrey	Pumping ...	2,254	Private Company	1860	15,000*	E. Easton	W. H. Snelgrove .....	.....	Constant .....	.....
Goole	Yorkshire	From Pumps	10,000	.....	1877 and 1878	970	W. H. Bartholomew	E. C. B. Tudor .....	.....	.....	.....
Gorton	Lancashire	Gravitation	35,000	Manr. Corporation	1851	.....	J. F. Bateman	A. W. S. Mullins	1 mile	Constant	35,000
Grantham	Lincolnshire.....	Pumping ...	17,000	Private Company	1850	35,000	Henry Teague	S. G. Gamble ...	6 miles	Constant	16,000
Great Grimsby	Lincolnshire.....	Pumping ...	31,000	Private Company	1864	40,000	Eastons & Andersons	Joseph Maughan	1 mile	Constant	28,000
Guildford	Surrey	Both.....	15,000	Sanitary Authority	1866	.....	J. Pilbrow.....	Henry Peake ...	In town	Intermittent	11,000
Halifax and District	Yorkshire	Gravitation	72,000	Corporation	1848 and 1880	650,000	J. F. Bateman	J. A. Paskin ...	16 miles	Constant	72,000
Halstead.....	Essex	Pumping ...	5,370	Local Board	1863	4,000	W. Syrett	G. H. Matthews	In town	Constant	4,000
Hayle	Cornwall	Gravitation	2,000	Local Board	1870	2,000	W. Husband.....	Jebus Bickle ...	3 miles	Constant	2,000
Harrowgate	Yorkshire.....	Gravitation	10,000	Private Company	1846, 1869, 1880	52,000	J. Thomas	E. W. Harry ...	6 miles	Constant	10,655
Harwich.....	Essex	Pumping ...	10,000	Private Company .....	.....	.....	P. S. Bruff	H. Ditsham ...	2 miles	Intermittent	.....
Haslingden	Lancashire	Gravitation	15,000	Private Company	1853	93,000	J. Cartwright	Thos. Bretherton	7 miles	Constant	9,000
Hastings	Sussex	Both.....	40,000	Local Board	1832—1880	98,770	Various	W. Andrews ...	3 miles	Intermittent	30,000
Heathtown.....	Staffordshire .....	.....	6,000	Wolverhampton Corporation .....	.....	.....	.....	.....	3 miles	Constant	3,000 to 4,000
Hendon & District	Middlesex.....	Pumping ...	30,000	Private Company	1876	.....	J. F. Bateman	C. A. Woodbridge	3 miles	Constant	15,000
Hereford	Herefordshire	Both.....	20,000	Corporation	1855	12,000	Geo. Cole, C.E.	Geo. Cole, C.E.	1 mile	Constant	14,000
Hertford	Hertfordshire	Pumping ...	7,169	Corporation	1862—1878	10,000	Grabatt and Bailey, Easton	W. H. Wilds ...	In town	Constant	4,000
Heywood ...	Lancashire	Gravitation	41,000	Private Co., now sold to Local Board	1846	125,000	James Diggle	James Diggle ...	5 miles	Constant	All
High Wycombe.....	Buckinghamshire	Pumping ...	11,000	Private Company	1875	7,500	E. E. Phillips	F. Burnham ...	In town	Constant .....	.....

Number of Houses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by measure or on Rental.	Whether covered Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Area of Impounding Reservoirs.	Maximum period of storage, in days.	REMARKS.
12,000 245 1,100	 19.2 .....	..... ..... .....	Rental .. Rental .. Rental ..	Covered Covered Two open, each 180,000 gals.	100,000 63,000	83 × 20 × 10	 1½ 3	Excluding the Union, the present death rate is 16.8.
..... 700	15.42	17.33	Rental .. Rental ..	Open..... Both.....	 150,000	1¼ acres 310 yards ...	 *	The supply is obtained from springs. *Water continually flowing in.
..... 250	16 19	 22	Both .. Rental ..	 Covered	 500,000	..... .....	..... 3	
..... 650	 16	 27	Rental to houses. Measure mills.	None	None	.....	.....	The Gildersome Local Board derive their supply from the Bradford High Level Water Works.
..... 70 2,000 About 5,000	20 to 23 10.8 24 19.6	Subject to considerable fluctuations. 18 24	Rental .. Rental .. Rental for consumers. Meter trade.	Open service, 60 acres Covered Open All open	 145,000 20,720,000 130,000,000	4,508 acres 11 acres 25 acres	{1-120 1-194 8 100 125	Hadfield Ward is supplied by Lord E. Howard. Population about 6,000, which leaves Corporation district 14,000 The question of additional water supply is now under consideration.
..... 8,000	14 18 22	18 21 or 22 26	Both Rental .. Rental ..	Open Open Covered	 275,000	..... ..... ..... .....	..... ..... ..... 2½	* Had to pay its proportion to the Caterham Water Company. Better water supply now under consideration.
..... 5,000 2,000	16 17	25 18 and 19	Assessmt. Both ...	Covered Both	 500,000	 3,480 & 4,000 sq. ft.	 2 and 4	
..... 1,600	25.4	25.6	Rental ..	None ..	1,348,000,000	250 acres ...	180	The works are constructed to give 6,250,000 gallons per day to the town, and also 4,000,000 gallons for compensation to the streams.
..... 1,230 300	17.4 *	 *	Rental .. Rental ..	Open None	42,000 1,000,000	17 ft. diam. 1,500 sq. yds.	1 30	Artesian well, depth of bore 330 feet, depth of pumps 95 feet. Since the Waterworks were established, typhoid fever has entirely disappeared, whilst previously death from this epidemic were from 12 to 15 annually; and scarlatina, formerly very malignant, is now much milder.
..... 2,131	13.7	*	Both ...	Open	80,000,000	26 acres	320	* When these works were first executed, Harrowgate was a village.
..... 1,650	15 17.9	 22	Rental 5% Rental 5%	None..... None.....	 910,000,000	 1,300 acres ...	 150	The reservoir from which this town is supplied, was constructed by a Private Company and sold to the Bury Corporation subject to conditions involving the liability to supply this town with water.
..... 5,500 600	16.84 23	18 about same	Both ... Rental ..	Both	45,000,000	16 acres	75	500,000 gallons of spring water per day pumped from mills, in addition to storage in reservoirs. The works are supplied from the Wolverhampton Corporation.
..... 3,000 800	13.7 18	16.6 22	Both ... Rental .. Both ...	Covered Uncovered Covered ..	 4,000,000 300,000	1¾ acres 500 sup. yds.	 6 3	
..... 10,000	 20	..... .....	Domestic, by gross; trade, by measure.	No	190,000,000	50 acres	100 (including compensation)	
..... 350	 18	 18	Rental ..	Covered	130,000	.....	2	

TOWN.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.	Number of People supplied.
						£					
Hipperholme	Yorkshire	Gravitation	2,600	Local Board .....	.....	.....	.....	.....	.....	Constant	2,600
Honiton	Devonshire	Gravitation	3,600	Corporation	Just completed	1,700	E. Ellis	E. Ellis	$\frac{3}{4}$ mile	Constant .....	.....
Horsham	Sussex	Pumping ..	6,625	Private Co., now Local Board ..	1865	6,000	R. Sheppard	George Pullen...	In town	Constant	4,000
Huddersfield	Yorkshire	Gravitation	102,000	Corporation	1845—1871	750,000	T. Hawkesley	R. D. Dugdale...	3, 4 & 8 miles	Constant	102,000
Hull	Yorkshire	Pumping ..	149,627	Corporation ..	1843—1863	215,000	D. Maxwell ..	D. Maxwell	4 miles	Constant ..	All
Huntingdon	Huntingdonshire...	Pumping ..	4,400	Corporation	1876	5,000	Easton and Anderson	R. Hutchinson	$\frac{1}{4}$ of mile ..	Intermittent	1,500
Hyde	Cheshire	Gravitation	32,000	Local Board	1870	27,700	J. Mitchell.....	J. Mitchell	$1\frac{1}{4}$ miles	Constant	28,000
Ilfracombe	Devonshire	Gravitation	6,500	Local Board	1860	.....	E. Appleton .....	.....	$1\frac{1}{2}$ miles	Intermittent	5,000
Ilkley	Yorkshire	Gravitation	5,000	Local Board	1876-7	15,500	E. Filliter	Walter Hirst ..	$\frac{1}{2}$ a mile	Constant	4,000
Inverness	Ivernesshire	Gravitation	16,000	Police Commissioners	1877	20,000	F. Bateman	G. A. Mackenzie	$6\frac{1}{2}$ miles	Constant	18,000
Ipswich	Suffolk	Both	50,000	Private Company	1855	75,000	Geo. Herwood	E. Buckham ..	In town	Intermittent	44,500
Jedburgh	Roxburgh.....	Gravitation	3,200	Corporation	1868	4,496	James Leslie	James Brown ..	About 3 miles	12 hrs. pr. day	all
Keighley	Yorkshire	Gravitation	25,000	Local Board	1876	223,800	McLean and Stileman	James Wetherill	7 miles	Constant	20,000
Keith	Banffshire	Gravitation	6,000	Local Authority	Completed 1879	5,000	John Willett .....	.....	5 miles	Constant	4,000
Kettering ..	Northamptonshire..	Pumping ..	11,000	Private Company	1872-3	14,200	Thomas Hennell .....	.....	2 miles	Constant	Abt 7,000
Lancaster	Lancashire	Gravitation	36,000	Local Board and Corporation	1852, '64, '78, '80	.....	R. Rawlinson and Mansergh	W. M. Hartley	about 9 miles	Constant .....	.....
Launceston.....	Cornwall	Gravitation	3,500	Local Board	1853	.....	John Dawe	John Dawe	$1\frac{1}{2}$, 3, $4\frac{1}{2}$ miles	Constant by day	3,000
Leamington	Warwickshire	Pumping ..	30,000	Corporation	1878—1880	26,000	F. Sharp, R. Davidson, G. B. Jerram	E. M. Richards	1 mile	Constant	26,000
Leicester.....	Leicestershire	Both	130,000	Corporation	1853 and 1870	400,000	T. Hawksley.....	F. Griffith	11 miles	Constant	120,000
Lichfield.....	Staffordshire	Both	8,000	Conduit Lands Trust	1876	15,000	T. Hawksley.....	G. Robinson ..	$\frac{1}{2}$ mile	Constant	7,500
Lincoln	Lincolnshire..	Pumping ..	37,000	Privt. Co. ; then by Corpn. in 1871	1848	24,000	Thomas Hawksley	J. J. Henderson	2 miles	Constant	39,500
Liverpool	Lancashire	Both	720,000	Corporation	Commenced about 1800 to 1880	2,380,000	T. Hawksley and others .....	.....	25 miles	Constant	720,000
Liversedge	Yorkshire.....	Gravitation	15,000	Local Board .....	.....	.....	.....	.....	24 miles	Constant	13,000
Llandudno	Carmarthenshire...	Gravitation	5,000*	Improvement Commissioners	1878—1880	40,000	T. T. Marks	T. T. Marks ..	16 miles	Constant	20,000*
Llanelly	Carmarthenshire...	Gravitation	19,000	Local Board	1855 and 1878	85,500	Beardmore and Barnes	George Watkeys	2 miles	Constant	18,000
Londonderry	Londonderry	Gravitation	30,000	Corporation	50 years ago and 1848-49	20,000	Various	W. J. Robinson	1 & $1\frac{1}{2}$ miles	Intermittent	All
Loughboro'	Leicestershire	Gravitation	15,000	Local Board	1869	23,500	James Simpson and John Taylor	George Hodson	$2\frac{3}{4}$ miles	Constant	10,000
Louth	Lincolnshire.....	Pumping ..	10,500	Private Company	1873	20,000	Shelford & Robinson	H.L.D. Marsden	$\frac{3}{8}$ mile	Constant	1,770
Ludlow	Salop	Both	5,600	Local Board	In progress	5,800	T. Curley	E. F. Clarke ..	$1\frac{1}{2}$ miles	Constant	5,600
Lynn, King's	Norfolk.....	Pumping ..	20,000	Corporation	80 or 90 years ago	.....	.....	C. W. Harding	In town	Constant	20,000
Macclesfield	Cheshire ..	Gravitation	36,000	Corporation ..	1830, '49, '73, '79	70,453	S. C. Trap ..	Jabez Wright ..	3 to 4 miles...	Constant	34,100

Number of houses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by measure or on Rental.	Whether covered, Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Area of Impounding Reservoirs.	Maximum period of storage, in days.	REMARKS.
600	22.7		Measure	Open				Supplied by Corporation of Halifax.
800	18½	27	Both ... Rental;	Covered	120,000	None	None	At highest point of town, water supplied only 12 hours per day. A few houses supplied by metre 2s. 6d. per thousand.
20,400 About 38,000	22.45 16	23 31	Both ... Both ...	Open Open	453,000,000 9,000,000	158 acres..... 3 acres.....	300 1½	Rateable value: borough, £570,302. Domestic: 5 per cent. on rental, trade by metre 6d. to 9d. per 1,000 gallons; the town supply is about 5,000,000 gallons per day. Water analysis: grains per gallon—total solid residue 26, chlorine 1.2. Parts per million: free ammonia .01, albumenoid .01. A wholesome potable water, but hard.
300	16	18	Both ..	Covered	100,000			The supply has failed, and gathering ground had to be largely increased, and new Reservoir built, designed by Borough Engineer.
5,380	26		Both ...	Open		5 acres		Manchester Corporation supplies 1,575,000 gallons per annum.
850	14 12		Rental Rental	Covered 3 Covered	275,000	3 to 4 acres		Estimate daily supply from springs already connected 300,000 gallons. The £15,500 includes Parliamentary and other legal costs, purchase of water rights, construction of reservoirs, laying mains, etc., etc.
			Rental	Open	7,200,000		8	Area of service reservoirs 333 acres. Supply is obtained from Loch Ashie, area 1½ square mile. The service of mains is not yet completed.
	21	23	Both ...	2 Covered	500,000	8,023 sup. feet	3	
268	36	42	Rental	Covered	52,000			
6,520 470	20.02 20	23 17.7	Both ... Rental	Open	215,000,000 90,000	66 acres 1,200 feet	1	Death rate of present year unprecedentedly high, principally amongst children from pneumonia and whooping cough; the water is spring and of good quality, and gives satisfaction.
1,350	18	20	Both ...	Covered	250,000		1	
4,462	31.35		Both ... Rental	Covered Covered	450,000, 581,000 250,000	60 acres	92	
5,000 24,500 560 7,275	17.3 19 19	18.3 27	Rental Both ... Both ... Domestic, by Rental; trade, Meter	Covered 2 Covered Covered 2 open	1,000,000 860,000,030 350,000 38,000,000	8,798 sup. ft. 200 acres None 25 acres	1½ 250 3 72	Old supply from River Leam, but now from an artesian well.
131,280 2,400 1,000 2,500 Abt. 4,000	26.9 13 23.1 23	not known 26.1	Rental Rental Both ... Rental	Covered Covered Covered Covered	4,057,000,000 168,000,000 150,000,000	601 acres 3 acres 30 acres 20 acres	220 200 90	Supplied by Bradford Corporation. In Summer the population is 17,000 to 20,000. 40 gallons per head per day. Four impounding reservoirs. It is contemplated to enlarge water supply at a cost of £10,000.
2,000 354	22 23		Both ... Rental		29,000,000 1,300,000	8¼ acres 2,500 sq. yds.	*96 7	*Dependent on flow of stream.
Abt. 4,000	24.34	N. K.	By rate Both ...	Covered	243,000	2,607 sq. ft.	3	Town supplied from a stream flowing through town. The first pipes were wood, then earthenware, now cast iron.
8,500	23.2	31	Both ...	Open	202,000,000	49 acres	*	*Depends upon the weather.

TOWN.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.	Number of People supplied.
Malton	Yorkshire	Pumping ..	8,200	Local Board	1866	£ 5,500	Easton & Co.	V. L. Webster...	In town	Constant	7,000
Malvern, Great ..	Worcestershire ..	Gravitation	6,500*	Local Board	1852—1876	17,000	Mr. Simpson and Mr. Hawkesley	John E. Palmer	1 mile	Constant	All*
Manchester	Lancashire	Gravitation	1,000,000	Corporation	1851	2,850,414	J. F. Bateman, F.R.S.....	T. H. G. Berrey	20 miles	Constant	1,000,000
Market Rasen	Lincoln.....	Gravitation	3,000	Private Company.....	1875-6	7,600	Henry Teague .....	.....	6 miles	Constant	2,000
Merthyr Tydvil.....	Glamorganshire ..	Gravitation	51,000	Local Board	1860	83,600	T. Hawkesley	Samuel Harpur	7 miles	Constant	50,000
Morecambe.....	Lancashire	Gravitation	4,700	Local Board	1864	4,500	John Lawson	John Bond	10 miles	Constant	4,685
Morley	Yorkshire.....	Both.....	15,000	Local Board	1866 to 1868	22,500	Jas. Lumley & E. Filleter	J. Sykes	4 miles	Constant	15,000
Morpeth	Northumberland ..	Gravitation	5,000	Local Board	1853	.....	R. Rawlinson	T.W.Middlemiss	3 miles	Intermittent	5,000
Neath & Briton Ferry	Glamorganshire ..	Gravitation	18,000	Private Company.....	1862 and 1879	37,964	R. J. Ward; A. Williams	W. Whittington	1 mile	Constant	14,200
Newport	Isle of Wight	Both.....	9,020	Corporation	1876	14,400	Russ & Minns	F.W.B.Waterworth	About 1 mile	Constant	7,500
Normanton	Yorkshire.....	Pumping ..	7,500	Local Board	1875	15,000	E. Lynam	Thos. Reid	3 miles	Constant	5,000
Northampton.....	Northamptonshire	Pumping ..	60,000	Private Company	1837	63,000	J. Glynn, F.R.S.	J. H. Pidwik ..	In town	Constant	47,500
North Taunton	Devonshire	Gravitation	2,080	Private Company	1853	575	— Commins	— Commins ..	$\frac{1}{2}$ mile	Constant .....	.....
Nottingham	Nottinghamshire ..	Pumping ..	200,000	Private Company, now Corporation	1831 to 1880	400,000*	Thos. Hawksley; M. O. Tarbotton	M. O. Tarbotton	2 and 6 miles	Constant	150,000
Oldbury	Worcestershire ..	Pumping ..	18,000	South Staffordshire Water Co. ....	.....	.....	.....	Joseph Deirs ..	.....	.....	.....
Oldham and District	Lancashire	Gravitation	170,000	Private Company	1826, '47, '54, '71, '76, and '80	689,000	Bateman, Hill & Bateman .....	.....	2, 6 & 7 miles	Constant	155,000
Osset - cum - Gawthorpe.....	Yorkshire.....	Gravitation	10,500	Local Board	1877	20,000	M. Paterson	W. Harrison ..	4 miles	Constant	10,400
Oswestry	Salop.....	Gravitation	8,500	Local Board	1866	13,000	Gotto & Beasley	W. J. Hodgson ..	6 miles	Constant	8,000
Oxford .....	.....	Pumping ..	abt. 40,000	Corporation	New Works, 1854-5	.....	R. Downing	R. A. MacBrair.	$\frac{1}{2}$ mile	Constant	About 37,000
Paisley	Renfrewshire	Gravitation	54,000	Corporation	1837, 1866, 1879	155,000	Thos. J. & A. Leslie	Robert Sharp ..	3 and 8 miles	Constant	54,000
Pemberton	Lancashire	Gravitation	14,000	Local Board	1879—1880	11,000	Geo. Heaton .....	.....	3 miles	Constant	10,000
Penrith	Cumberland.....	Pumping ..	10,000	Local Board	1853, 1863, 1879	12,000	W. N. Dask	Thomas Polton ..	In town	Constant	9,000
Penzance	Cornwall	Gravitation	12,000	Town Council	1850	17,672	J. Matthews	Geo. H. Small ..	3 miles	Constant	12,000
Perth	Perth	Pumping ..	26,600	Local Board	1832—1880	46,000	A. Anderson & J. F. Bateman ..	J. Peathe.....	In town	Constant .....	.....
Peterboro'	Northamptonshire	Pumping ..	25,000	Corporation	1880	84,000	John Addy .....	.....	14 miles	Constant	7,275
Plymouth	Devonshire	Gravitation	75,000	Corporation	1585	.....	Sir Francis Drake	Henry Alty.....	12 miles	Constant	100,000
Pontefract	Yorks	Pumping ..	8,000	Corporation	1850	10,000	B. Hartly	Wm. Scriven ..	In town	Constant	7,500
Poole	Dorset	Gravitation	11,500	Private Company	1859-60	14,000	R. B. Perkwick.....	H. Miller	2 $\frac{1}{2}$ miles	Constant* ..	6,200
Portsmouth	Hants	*Pumping ..	136,000	Private Company	1810-57	240,000	Messrs. Quick and Son.....	C. G. Adams ..	About 8 miles	Constant	130,000
Preston	Lancashire	Gravitation	90,000	Private Co., now Corporation.....	1832-54	328,405	Phillip Park	Hudson Real ..	9 to 20 miles	Constant	100,000
Prestwick	Lancashire .....	*	.....	.....	.....	.....	.....	.....	.....	.....	.....
Reading	Berks	Pumping ..	40,000	Private Company	1851 and 1878	41,000	J. Simpson; W. Donaldson.....	A. W. Parry ..	1 $\frac{1}{2}$ miles	Constant	44,000
Richmond	Yorks	Gravitation	13,555	Corporation	1836, '68, & '74	2,713	H. Smith; J. F. Tone; — Dickenson	J. Smith	1 $\frac{1}{4}$ & 2 $\frac{1}{2}$ miles	Both .....	.....
Ripley	Derby	Pumping ..	6,200	Local Board	1876	10,210	Robert Argile	Robert Argile ..	$\frac{1}{4}$ mile about...	Constant	abt. 1,800

Number of Houses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by measure or on Rental.	Whether covered Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Area of Impounding Reservoirs.	Maximum period of storage, in days.	REMARKS.
1,500	18.89	25.8	Both ..	Covered	200,000		1	*The population varies in consequence of number of visitors.
9,000	12	.....	Measure	Covered	(2)1,000,000ea.	.....	.....	
200,000	24.7	33	Both ..	.....	4,544,000,000	603½ acres ..	142	
Abt. 10,000	22	30	Rental	None.....	12,000	.....	.....	
940	2.35	.....	Rental	Yes	*360,000,000	120 acres.....	90	
			Both ..					A further supply is obtained from two springs. *Being also for compensation to mill owners, &c. This Local Board receive their supply from the Lancaster Corporation at a point 4 miles distant from the town of Morecambe, and through meter.
2,000	21.4		Both ...	Covered	1,500,000		9	This includes the town of Briton Ferry. Area of gathering ground 12,238 acres.
940	18	26	Rental	Covered	7,000,000	3 acres.....	117	
3,069	.....	.....	Both ...	.....	27,750,000	17 acres	78	
1,500	17.8	21	Both ...	Yes	330,000	3,500 sq. ft....	1½	
1,000	14.28	20,25	Both ...	Open.....	1,000,000	.....	30	
9,500	18		Both ...	Covered	3,000,000		7	The supply from springs equal to consumption without storage, except one tank. * This was the share capital; impossible to say what the works cost.
250	.....	.....	Rental	Covered	6,000	.....	.....	
	24	.....	Both ...	Both.....	7,000,000	.....	2	
			Both ..	.....	.....	.....	.....	
33,201	21.6	.....	Rental	None.....	1,223,500,000	123¼ acres ..	150	
								Works bought by Corporation, 1853.
2,200	22	24	Both ...	Covered	1,000,000	10,800 sq. ft.		Additional works about to be constructed. * Exclusive of Colleges. Water pumped from a Lake.
1,400	18.5	.....	Both ...	Open	5,000,000	.....	24	
About 6,900*	22.8	.....	Rental	Yes	Lake	Abt. 12 acres	.....	
	Varies 24 and 29	.....	Rental	Covered	875,000,000	200 acres ..	168	
500*	25 to 30*	25 to 30	Both ...	Covered	15,000,000	5 acres.....	100	
								* But others now being connected; meantime the public obtain a supply from standpipes. * The works have only been in operation a few months, so their effect on the mortality cannot be ascertained. There can be no doubt that they will have a very beneficial effect, as without them the district would be in a very miserable condition through want of water.
1,500	25		Rental	Covered	442,800			*We have no impounding reservoirs. Area of gathering ground nearly 5,000 acres. 135,000 gallons per day, pumped for six days per week.
2,500	16.4	.....	Rateable value	.....	12,000,000	5½ acres	60	
	15.6	.....	Both ...	Both.....	1,820,412	.....	3	
1,375	21.8	24.10	Both ...	Covered	1,006,194	.....	.....	
About 11,000	22	.....	Rental	Open .....	*	.....	.....	
1,500	16.21		4 per cent on rateable value	Covered	369,000	None		*The water is pumped into two reservoirs then gravitates. Cost per 1000 from 1s. 6d. to 9d. Town supply 4½ million gallons per day. Water so pure as not to require filtering. Works purchased in 1854 by Corporation. *Supplied by Manchester Corporation Waterworks Company, and Bury and Radcliffe Company.
1,250	20.79	23.5	Both ...	Covered	450,000	7,200 sq. feet	4	
24,000	16.51	24	Ptc. Houses by rental, Brew-eries, etc. by measure	None.....	Service 10,000,000 galls. Imp. Reservoirs 5000,000	7 acres	2	
23,179	27.34	28.24	Both ..	Open... ..	52,173,000	26 acres	100	
8,000	19.2		Both ...	No.....	6,250,000	6⅓ acres	5½	Works purchased in 1868 by Corporation.
466	15	22	Both ...	Covered	87,201	42½ by 14 9½	.....	
about 370	19.74*	21.74	Both ...	Open.....	330,000	None	4	
								Works not in general use yet. *At the present time scarlatina is raging.

TOWN.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.	Number of People supplied.
Rotherham	York	Pumping ...	34,404	Corporation	1874	£ 123,000	James Mansergh	George Jennings	3½ miles	Constant	35,000
Runcorn	Cheshire	Pumping ...	14,000	Private Company	1866	54,000	Hawksley & Cunningham	Richard Barker	Within boundary	Constant	13,000
Rye	Sussex	Both	4,500	Corporation	1718	.....	.....	Albert Smith	In town	Intermittent	about ½
Ryhope	Durham	No works...	6,000	.....	.....	.....	.....	.....	.....	.....	.....
St. Helen's	Lancashire	Pumping ...	10,000	Corporation	1872	110,600	D. M. F. Gaskin	D. M. F. Gaskin	2 to 7 miles...	Constant	60,000
St. Thomas	Devonshire	Pumping ..	6,000	Local Board	1868	.....	E. Ellis	S. Churchward..	¼ mile	Constant	4,500
Sale	Cheshire	Gravitation.	7,200	Private Company	1857	20,000	H. B. Altrincham	A. E. McBeath	5 miles	Constant	7,200
Salford	Lancashire	Gravitation.	180,000	Manchester Corporation	(See Manchester.)	.....	J. F. Bateman	Arthur Jacob	15 miles	Constant	All
Salisbury	Wiltshire	Pumping ...	12,903	Local Board	1854	14,500	J. Rammel	John Borhams...	¼ mile	Intermittent	12,903
Scarborough	Yorkshire	Pumping ..	30,000	Private Company	1845	83,500	E. Filliter .....	.....	3½ & 4½ miles	Constant	30,000
Selkirk	Selkirk	Pumping ...	6,000	Commissioners	1865	5,600	James Leslie	J. Boydon	1 mile	Constant	6,000
Shanklin	Southampton	Gravitation	4,000	Local Board	Not finished	Don't know	J. Newman .....	.....	About 1 mile.	Intermittent	Abt. 2-3rds
Sheerness	Kent	Pumping ..	15,000	Local Board	1867-78	£12,000*	J. Lund; H. S. Pollard	E. C. Bogaert...	In town	Intermittent	.....
Sheffield	Yorkshire	Gravitation	300,000	Private Company	Various	1,695,000	T. & C. Hawkesley	Robert Davidson	9 miles	Constant	300,000
Shields, South	Durham	Pumping ...	62,000	Private Company .....	.....	.....	Thomas Hawkesley	Matthew Hall...	About 1 mile	Constant .....	.....
Shrewsbury	Shropshire	Both	25,000	Corporation	1861	54,000	.....	G. J. Butler	¼ and 1¼ miles	Both	23,000
Sidmouth	Devonshire	Gravitation	3,500	Private Company	1845	.....	Paul Hayman .....	.....	1 mile	Intermittent	600
Sittingbourne	Kent	Pumping ..	9,000	Local Board	1871	7,000	— Easton	W. L. Grant	2 miles	Constant	5,000
Sleaford	Lincolnshire	Pumping ...	5,000	Private Company	Now executing	.....	— Broadell, Esq.	Jesse Clare	¾ mile .....	.....	.....
Southport	Lancashire	Pumping ..	34,100	Private Company ..	1854-6, 1867-70	182,500	Thomas Hawkesley	W. Crabtree	9 miles	Constant	42,000
Spalding	Lincolnshire	Both	9,100	Private Company	1860	18,600	Easton & Amos .....	.....	10 miles	Constant	N.K.
Stamford	Lincolnshire	Gravitation	8,040	Private Company	1830-77	.....	Stevenson, Easton & Amos	J. Richardson...	1½ & 3½ miles	Constant	8,040
Stirling .....	.....	Gravitation	14,500	Local Board	1848-64	23,224	Mr. Gale; Mr. Mackin	William Ronald	3½ miles	Intermittent	14,500
Stockton-on-Tees ..	Durham	Pumping ..	42,000	Private Company, now Corporation	.....	.....	.....	James Wall .....	.....	Constant ..	130,000
Stoke-on-Trent	Staffordshire .....	.....	19,500	Staffordshire Potteries Water Co.	.....	.....	.....	W. Bowen .....	.....	Constant	19,500
Stroud	Gloucestershire ..	Gravitation	15,000	Local Board .....	.....	.....	Various	J. P. Lofthouse	¾ and 3 miles	.....	.....
Swindon	Wiltshire	Pumping ..	20,000	Private Company	1857	33,000	— Fenton	T. V. T. Davison	3 miles	Constant	Abt. 16,500
Taunton	Somersetshire	Gravitation	18,000	Private Company, now Corporation	1859	15,000	Leversage; Easton	James H. Smith	7 miles	Intermittent	12,000
Teignmouth	Devonshire	Both	8,000	Local Board .....	.....	.....	.....	.....	¾ of mile	Intermittent	8,000
Tenby	Pembrokeshire	Gravitation	5,000	Corporation ..	1847	.....	R. Hassard	H. T. Morley	½ and 2½ miles	Constant	5,000
Tewkesbury	Gloucestershire ..	Pumping ..	5,400	Private Co., sold to Corporation..	1870	7,000	W. McLandsbrough	W. H. Gray	About 1 mile	Constant	Abt. 1,070
Thetford	Norfolk	Gravitation	4,166	Town Council	1877	7,900	J. Church .....	.....	½ mile	Constant .....	.....
Totnes	Devonshire	Gravitation	4,000	Corporation	1866	.....	E. Appleton	T. Cuming	1 mile	*Constant ..	4,000
Tow Law	Durham	Gravitation	50,100	Private Company	1866, '72	.....	Thomas Hawkesley	J. Emerson (Clerk)	7 miles	Constant	50,100
Tring	Hertfordshire	Pumping ...	4,600	Private Company .....	.....	.....	Mr. Callon	W. Bains	2 miles	Constant .....	.....
Trowbridge & Dist.	Wiltshire	Gravitation	20,000	Private Company	1874, '78	43,000	Henry Tomlison .....	.....	7 & 13 miles	Constant	10,500
Tunbridge	Kent	Pumping ...	9,500	Private Company	1852	11,180	A. Kinder	G. Hobbs	300 yards ..	Constant	5,000
Tunbridge Wells ..	Kent	Both	24,000	Local Board	1868	120,000	Nixon & Dennis	W. Brentnall	6 miles	Intermittent	19,181
Tynemouth	Northumberland ..	Both	43,000	Private Company	1846	89,000	J. M. Favell	J. P. Spencer	4 miles	Partly both..	Abt. all

Number of Houses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by Measure or on Rental.	Whether covered Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Area of Impounding Reservoirs.	Maximum period of storage in days	REMARKS.
about 6,000	17.20	30 to 33	Rental 7 per cent. Measure for manufactories	Covered	150,000,000	43 acres	200	Local Board District supplied by meter in addition. Masbro' included.
.....	22	23	Both ...	Covered	1,500,000	.....	.....	
.....	18	.....	Rental	Covered	40,000	.....	1	*Supplied by Sunderland and South Shields Waterworks Company.
About 10,500	21.44	30.81	Both ...	Covered	2,500,000	.....	.....	*Small Gravitation Works of 130,000 gallons per day for manufacturing purposes only.
.....	19	.....	Rental	Open.....	360,000	7,918	3	
1,400	12.08	14.08	Rental 5%.	None.....	*	*	* see remarks	The Water is supplied to the Company by the Manchester Corporation by measure, the maximum daily supply being fixed at 500,000 gallons. *Answers cannot be given, as the Manchester reservoirs supply a large area in addition to what this return refers to.
.....	24.9	28	Measure	Open	15,000,000	.....	.....	
2,721	18.6	27.7	Both ...	Covered	650,000	.....	less than 1	
6,600	.....	.....	Both ...	None.....	5,500,000	None	7	Works purchased in 1878 by Corporation; extensions will shortly be made.
450	.....	.....	Rental	Covered	112,500	None .....	.....	
.....	Very small	.....	Rental	Covered	130,000	.....	.....	Water question under consideration, whether to drive further into the hill or form large reservoir.
2,553	14	17	Rental	Covered	110,200	.....	.....	*Not including street mains.
59,483	21.2	27	Both, chiefly on rental	Open.....	2,000,000,000	Abt. 460 acres	.....	
.....	16	.....	Both ...	Open... ..	.....	.....	.....	
4,600	22	25	Both ...	Covered	289,000	$\frac{1}{3}$ acre .....	.....	Gravitation works have existed for about 300 years. Supply obtained from river Severn.
80	18	.....	Rental	Covered	20,000	Nil	$\frac{1}{3}$	Works about to be enlarged, only one reservoir at present.
850	14.25	18 to 24	Both ...	Covered	150,000	.....	4	Previous to Waterworks, enteric fever was very prevalent, but now cases are very rare; one in 15 months.
.....	.....	.....	.....	.....	.....	.....	.....	Works now in course of construction and not yet in use.
7,700	18.10	.....	Rental	Covered	1,000,000	300	1	In 1878, obtained power to borrow £200,000, and works now in progress. They supply 47,006 acres, of which Southport is only 3,665.
850	.....	.....	Both ...	.....	37,000	.....	Less than 1	
.....	20.4	.....	Both ...	Open.....	.....	.....	.....	
3,816	20	.....	Both ...	Open	61,273,887	13 $\frac{1}{2}$ acres.....	140	About 30 gallons per head per day.
7,500	.....	.....	Rental and Measure.	Open .....	.....	.....	.....	
3,800	15	.....	Rental	.....	.....	.....	.....	
.....	18	.....	Both ...	Both.....	4,000,000	.....	.....	5 reservoirs; 3 open and 2 covered.
3,300	.....	.....	Both ...	No	9,350,000	1.80 feet sq. 1.1 $\frac{1}{2}$ acres	2 $\frac{1}{2}$	
2,030	22.3	.....	Rental	Covered	850,000	1,650 yds.	.....	Works now under improvement. Corporation bought Works for £20,000.
.....	13	19	Rental	Both	3,300,000	35,408 sq. ft.	2	
860	15.60	18.20	Rental	Open	4,600,000	.....	76	Before 1874 there was a great scarcity of water. Water in summer carted about and sold by the pailful.
214	17	17 to 18	Rental	Covered .....	.....	.....	2	Pumped from the River Severn
250	.....	.....	Both ...	Covered	350,000	.....	.....	
155	11.8	19	Rental	Covered	340,000	3,000 sup. ft.	.....	*The water is now turned on (in summer) for an hour per day, in winter always turned on.
N.K.	15	24	Rental	No .....	.....	.....	.....	Supplied by "Weardale & Shildon" Waterworks Company.
.....	17.7	.....	Both ...	Covered .....	.....	.....	.....	
2,100	.....	.....	Both ...	.....	.....	.....	.....	
750	13	.....	Rental	Open.....	200,000	.....	2	
2,951	13.4	19	Rental	Covered	None .....	.....	6	
About 7,000	Abt. 20	.....	Both ...	No.....	36,000,000	.....	.....	

TOWN.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.	Number of People supplied.
Uxbridge	Middlesex	Pumping ...	7,500	Local Board	1856	£ 14,000	Pilbrow & Mansergh	Georges Eves...	$\frac{1}{2}$ mile.....	Intermittent	6,000
Ventnor	Southampton	Both	6,000	Private Company	1848, 1866	*	J. G. Livesey	J. G. Livesey ...	1 mile.....	Constant....	6,000
Wakefield	Yorkshire.....	Pumping ...	40,000	Private Company, now Corporation	1837, 1838	210,000	Wm. Billenton .....	.....	2 miles	Constant....	40,000
Walsall	Staffordshire	Pumping ...	58,000	Private Company	Comd. 1856	719,000	William Vawdrey	William J. Boys	10 $\frac{1}{2}$ miles ...	Constant....	179,155
Wanstead	Essex .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warrington	Lancashire	Both	abt. 40000	Private Company .....	.....	.....	.....	.....	about 3 miles	.....	.....
Warwick	Warwickshire	By Gravitation since '77. Formerly by pumping from river Avon	12,000	Corporation	Old 1856, new '77	New works 25,000	E. Pritchard	F. Broughton ...	4 miles	Constant....	12,500
Wavertree	Lancashire	Both	abt. 11,000	Liverpool Corporation .....	.....	.....	.....	R. Crowther ...	In town*.....	Constant....	11,000
Wednesfield	Staffordshire	Only partly	3,730	Wolverhampton Waterworks .....	.....	.....	Joseph Tankeys .....	.....	.....	.....	.....
Wellingboro'	Northamptonshire	Pumping ...	12,000	Local Board	1871	15,000	Edward Sharman.....	Ed. Sharman ...	1 $\frac{1}{2}$ miles	Constant....	8,675
Wellington.....	Salop	Gravitation	5 to 6,000	Private Company	about 1855	.....	.....	W. H. Belton ...	2 $\frac{1}{2}$ miles	Intermittent	450
Welshpool	Montgomery	Gravitation	4,000	Corporation	1862	3,500	Messrs. Dymonds	Robert Hurst ...	1 $\frac{1}{2}$ mile	Constant....	4,000
West Bromwich.....	Staffordshire	Pumping ...	54,000	Private Company .....	.....	.....	.....	.....	.....	Constant....	54,000
Westgate-on-Sea ...	Kent	Pumping ...	3,000	Private Company	1872	.....	W. A. Vanlow	B. Bailey.....	$\frac{3}{4}$ mile	Constant....	3,000
Weston-super-mare..	Somersetshire ...	Pumping ...	16,000	Private Company, but purchased by Local Board in 1878	1853	Purchased for 65,000.	.....	John Willacy ...	Near town ...	Constant....	12,750
Whitby	Yorkshire	Gravitation	14,000	Private Company	1866	17,000	E. Easton	T. K. Scott.....	12 miles	Constant....	13,000
Whitehaven	Cumberland	Gravitation	21,000	Local Board	1849	40,000	Thomas Hawksley	Walter Hales; R. Pickering	9 $\frac{1}{2}$ miles	Constant....	23,000
Wilton	Wilts	Pumping ...	1,871	Local Board	1856	.....	T. Rammell and F. Haines	J. C. Bothams ..	.....	.....	1,871
Wimbledon	Surrey	Pumping...	15,000	Private Company	1858	.....	J. Taylor and W. Rumble	Thos. Mason ...	8 miles	Intermittent	15,000
Winchester	Hampshire	Pumping ...	20,000	Private Company .....	.....	.....	W. U. Tinney	Wm. Gamon ...	within the city	6 a.m. to 7 p.m.	15,000
Windsor & District	Berkshire.....	Pumping ...	15,000	Private Company	1696	.....	W. H. Cutler	T. V. Davison	$\frac{1}{2}$ mile	Constant....	14,000
Winsford	Cheshire	Both	10,000	Local Board	1876 to 1878	20,000	Henry Bancroft ..	J. Waring	4 miles	Constant....	8,500
Wisbeach	Cambridgeshire ...	Both	10,000	Private Company.....	1865-7	25,800	E. Easton .....	.....	20 $\frac{1}{4}$ miles ...	Intermittent	10,000
Witham	Essex	Pumping ..	3,500	Local Board	1869	7,000	Jabez Church	F. Bacon.....	In town	Intermittent	3,200
Wombwell	Yorkshire.....	Gravitation	8,000	Local Board	1878	8,000	J. McLandsbrough	John Robinson	In township	Constant....	abt. 2,450
Woolwich	Kent	Pumping ...	40,000	Private Company	1814 to 1880	.....	W. Morris.....	.....	1 mile	Both .....	.....
Worcester	Worcester.....	Pumping ...	35,000	Corporation	1857-67	48,000	Messrs. Hawksley	L. G. Purchas...	1 mile	Constant....	Nearly all
Workington	Cumberland.....	Gravitation	10,000	Local Board	1852-79	28,000	Pickering & Crompton	W. L. Eaglesfield	16 miles	Constant....	13,000
Worksop.....	Nottinghamshire..	Pumping ...	10,400	Private Company	1870	10,697	Joseph Fairbank	John Allsopp ...	1 mile	Constant....	1,150
Worthing	Sussex	Pumping ...	10,000	Local Board	1856	.....	R. Rawlinson	Walter Horne...	In town	Constant....	10,000
Wrexham	Denbigh	Gravitation	10,000	Private Company	1868-79	57,000	— Wyatt	J. W. M. Smith	Nearly 6 miles	Constant....	.....
Wokingham	Berkshire	Works in progress	2,868	.....	.....	.....	.....	.....	.....	.....	.....
Yeovil.....	Somersetshire	Gravitation	10,000	Corporation	1874	20,000	T. & C. Hawksley	R. Vining	9 miles	Constant....	8,000
York	Yorkshire.....	Pumping ...	64,908	Private Company	1846 and 1876	138,000	J. Simpson; T. & C. Hawksley ..	G. Styan.....	1 $\frac{1}{2}$ miles	Constant....	60,000

Number of Houses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by measure or on Rental.	Whether covered Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Area of Impounding Reservoirs.	Maximum period of storage, in days.	REMARKS.
1,500	.....	.....	Both ...	Covered .....	.....	2,700 ft. ....	.....	Supply from three bores in chalk and adits 130 feet below surface in chalk, pumps in duplicate ; annual cost of pumping and repairs about £600.
1,200	15.4	.....	Rental	Covered	50,000	.....	4	*The cost of water and gas works up to date to about £50,000.
8,000	19.45	.....	Both ...	Open.....	3,500,000	.....	.....	
35,831	.....	.....	Rental	Open.....	178,000,000	.....	.....	
.....	24.3	.....	.....	.....	.....	.....	.....	Supplied by East London Waterworks Company.
.....	20.9	20.1	Rental to Private Meter to trade.	.....	.....	.....	.....	Supply derives from two adits 16 feet deep into drift sand. Daily average of water consumed is 23 gallons per head.
2,200	10	.....	Rental	Both... ..	.....	.....	.....	Supplied partly from own district and partly from the Rivington Hills, 30 miles from town.
1,735	19	24.5	Both ...	Covered	330,000	800 feet	3	800,000 gallons per week pumped from wells and small impounding reservoir.
.....	.....	.....	Rental	.....	.....	.....	.....	This waterworks being deficient and unsatisfactory is about to become the property of the Local Board, who will lay larger pipes and increase storage room, the supply at present being insufficient.
800	16	25 to 30	5d in the £ on Rateable value	Open	15,000,000	40 acres about	42	In a dry summer, the supply is intermittent. Covered filter beds in duplicate.
10,800	.....	.....	Both ...	.....	.....	.....	.....	
500	See Remarks	.....	Rental	Covered	12,000	.....	Tank emptied every day	Only five persons have died in last seven years, two of these were visitors brought in a dying state.
1,699	16	.....	rateable value	2 Covered.....	767,846	.....	4	
2,420	20.75	.....	Rental	Covered	250,000	None	1½	
4,000	.....	.....	Rental	Open.....	1,000,000	758 acres....	1,000,000	The draft of 1,000,000 gallons daily is irrespective and limited ; and from an open lake.
350	.....	.....	rateable value	Covered .....	.....	.....	.....	
3,000	12.5	No return	Rental	Both	*	*	*	*Answers cannot be given to these, as the district is only a suburb and part of two systems.
3,000	19.1	.....	Rental	Covered	400,000	.....	1	
1,800	14	.....	Rental	Wells .....	.....	.....	.....	
1,850	21	.....	Both ...	Open.....	250,000	.....	*	*Supplied direct from constant springs through small reservoir, constructed so as to be used as filter; no storage means available.
1,600	22	27	Both ...	.....	.....	.....	.....	
540	14	21	Both ...	Covered	20,000	14ft. diameter	.....	
about 490	19	.....	Rental	2 Open.....	3,000,000	about 4 acres	.....	
.....	.....	.....	Rental	Covered	8,000,000	.....	1	
7,750	18.4	36	Both*	Covered	850,000	.....	.....	*5d. per 1,000 gallons by meter, or 5d. in the £ on rateable value.
about 2,400	22.6	26.5	Both ...	Covered	about 240,000	648 acres....	60*	This supply is taken from a lake with power only to draw off 2 feet deep,* this is the minimum.
250	.....	.....	Rental	Open.....	1,000,000	.....	.....	Death not ascertained, but since the completion of the waterworks, preciable benefit to the community.
1,850	16.5	16.3	Both ...	Covered	113,000	.....	10 hours	
.....	22.8	.....	Rental for consumers, Meter trade	Open.....	40,600,000	4½ acres....	.....	The death rate would not be affected by the water question.
.....								
1,364	15 5	18.8	Both ...	Covered	Unlimited.	.....	.....	
12,250	21.1	24	Both ...	Open.....	2,000,000	.....	.....	

WATERWORKS.	COUNTY.	Whether supplied by Gravitation or Pumping.	Present Population.	By whom were the Works constructed.	Date of construction of Works.	Cost of Works.	Name of Engineer.	Name of Surveyor.	Distance of source to town.	Whether constant or intermittent supply.
Caterham Spring Water Company. Caterham Warlingham Godstone Bleechingley Nutfield Redhill	Surrey	Pumping ...	24,000	Company incorporated by special Act of Parliament.	1862, and since enlarged.	£ Capital now expended 62,000	S. C. Homersham.....		Works are at Caterham.	Constant.....
Kent Waterworks Company, supplies the South Eastern Suburbs of London, including Deptford Greenwich Blackheath Woolwich, &c., &c. (Area supplied nearly 120 square miles)	Kent, and parts of Surrey.	Pumping ..	350,000	Company	1688 and 1862	657,000	W. Morris		Sources of supply within district.	Formerly the whole intermittent, now one-fourth constant
West Surrey Water Company comprises the Parishes of Walton-on-Thames Weybridge Chertsey	Surrey	Pumping ..	18,740	Private Company.....	1869 to 1880	35,792	E. Birch.....		1 mile to Walton & Weybridge, 3 to Chertsey ..	Intermittent
Staffordshire Potteries, W.C. ... Hanley Burslem Tunstall Langton Stoke-on-Trent and District and Newcastle-under-Lyne	Staffordshire	Pumping ...	180,000	Private Company	1847	270,000	G. D. Harrison		10 miles, and other sources less distant...	Constant
South Staffordshire Water Company. Burton-on-Trent Walsall Wednesbury Darlaston Tipton Dudley West Bromwich Smethwick Oldbury, &c., &c.	Staffordshire	Pumping ...		Private Company	1858, and since enlarged.	719,000	McLean, Stileman & Vawdrey ...		Various	Constant

Number of People supplied.	Number of Horses supplied.	Present Death Rate per 1,000.	Death Rate per 1,000 previous to execution of Waterworks.	Whether charged by Measure or on Rental.	Whether covered Service Reservoir, if any.	Capacity of Impounding or Service Reservoirs, if any, in gallons.	Maximum period of storage in days	REMARKS.
11,000	1,900	14.	19.	Rental, with few exceptions.	Both, all at Caterham, in an open, unpopulated district	500,000	2 or 3	Water softened by Dr. Clark's process.
300,000	50,000	.....	.....	Rental, domestic purposes.	Covered	10,000,000	1	From 1688 to present date, formerly from water pumped from River Ravensbourne, since 1862 from chalk wells entirely.
3,000	500	Walton 14.8 Weybridge 10.4 Chertsey 17.00	Walton 14.7 Weybridge 17. Chertsey 19.4	Rental for domestic purposes, measure for trade				
180,000	35,600	.....	.....	Both.....	Several reservoirs some of which are covered	4,000,000	1 Engines always pumping.	The Company has two impounding reservoirs, capacity about 1,000 millions of gallons for compensation to streams only.
179,155	35,831	.....	25.	Rental ...	Both	251,000,000		

